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SMITH & MONROE & GRAY ENGINEERS

MEMORANDUM

8-169

TO: Richard Cooke, AGCW  
FROM: Stephen Rinella, SMS  
DATE: May 24, 1991  
RE: Seattle Plant Modernization  
SITE DRAINAGE

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FYI.  
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Following is a status report and schedule for completion for the engineering for the above referenced project.

During this last week we finalized details of the drainage collection, detention pumping and routing of the forced line to the City connection in the street. We have sized and selected all components of the system, we have confirmed the design parameters and details with the City.

During this week we have started final drawings; drawings include one "Site Drainage Plan" showing the total site collection and routing and the location of the major components, and three detail drawings of piping schematics, manhole and vault details, the settling basin, pump station and other miscellaneous details necessary for a complete submittal to the City for permits and adequate for eventual construction. We are about 50% done with the drawings and expect to have a 90% complete set of drawings done and ready for your review mid next week; I will confirm this early next week.

We have evaluated three separate routes for the forced main line from the detention area to the City connection in the street. All of the options included some underground and some above ground distribution. We have estimated associated costs for comparison and evaluation of the options and have found, in general, above ground piping is more costly when we have to route over roads.

The final route selected from the detention area first utilizes the two existing underground 8 inch lines for the existing cooling tower to the south east corner of the Clinker Silos. The two lines are joined to one new underground 14 inch line that follows the existing 18 inch gravity line to the south east corner of the Finish Mill Building and then is routed (still underground) around some other buried utilities in the area to

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the concrete wall separating Stoneway from your property just south of your Group 2 Cement Silos. The new line then daylights and is routed above grade at the base of the wall all the way north and east about 80 feet inside the entrance gate where it will then drop underground and be routed straight out to the City. This route is minimum costs since we do not elevate the pipe to cross any roads, most underground is adjacent to the roadway and does not cross other utilities and we are supported above ground a considerable amount but close to the ground.

We have reviewed the capital costs for the project and we have gotten specific prices from contractors for the detention and distribution pipe supply and installation and the pumps. Our current estimate for the specific equipment, materials and route selected is \$282,000 including overhead and contingencies and excluding legal, permit and engineering fees (comparable to the \$304,000 figure shown on page 9 of the Klein report/letter to you dated April 11, 1991).

cc: Nate Fernow, Ash Grove Seattle

ASH GROVE CEMENT WEST, INC.  
SEATTLE SITE DRAINAGE

UPDATE: MAY 23, 1991  
JOB NUMBER: 8-165

ACT NO.	DESCRIPTION	QUANT	UNIT	UNIT MTRL COST	UNIT LABOR COST	TOTAL EQUIP COST	TOTAL MTRL COST	TOTAL LABOR COST	TOTAL COST
STORM SYSTEM CONNECTION TO 18" CITY SERVICE IN STREET									
	EXCAVATE FOR MANHOLES & PUMPS	400	CY	\$0.00	\$8.71	\$0	\$0	\$3,484	\$3,484
	FILL FOR MANHOLES & PUMPS	300	CY	\$5.75	\$1.66	\$0	\$1,725	\$498	\$2,223
	EXCAVATE FOR DETENTION PIPE	3578	CY	\$0.00	\$2.27	\$0	\$0	\$8,122	\$8,122
	FILL BED DETENTION PIPE	690	CY	\$8.75	\$1.66	\$0	\$3,968	\$1,145	\$5,113
	FILL FOR DETENTION PIPE	3016	CY	\$5.75	\$1.66	\$0	\$17,342	\$5,007	\$22,348
	CATCH BASIN / MANHOLE	1	EA	\$572.00	\$389.70	\$0	\$572	\$390	\$962
	FLOW CONTROL MANHOLE	1	EA	\$572.00	\$389.70	\$0	\$572	\$390	\$962
	DETENTION PIPE	600	LF	\$45.65	\$16.63	\$0	\$27,390	\$9,975	\$37,365
	TAP INTO EXISTING 18" LINE	1	ALLOW	\$0.00	\$1,000.00	\$0	\$0	\$1,000	\$1,000
	CONNECT MH'S AND DETENTION	35	LF	\$50.00	\$30.00	\$0	\$1,750	\$1,050	\$2,800
	PUMP VAULT AND DUPLEX PUMPS	1	LS	\$5,000.00	\$5,000.00	\$15,000	\$5,000	\$5,000	\$25,000
	CONNECT PUMPS TO EXIST 2-8"	40	LF	\$50.00	\$50.00	\$0	\$2,000	\$2,000	\$4,000
	JOIN 2-8" TO NEW 14" MAIN	1	LS	\$1,000.00	\$1,000.00	\$0	\$1,000	\$1,000	\$2,000
	NEW 14" UG TO SW CORN FM BLDG	360	LF	\$39.85	included	\$0	\$14,346	\$0	\$14,346
	NEW 14" UG TO EXIST CONC WALL	300	LF	\$44.50	included	\$0	\$13,350	\$0	\$13,350
	NEW 14" ABOVE ALONG WALL TO M	620	LF	\$39.85	included	\$0	\$24,707	\$0	\$24,707
	NEW 14" UG TO CITY CONNECTION	100	LF	\$66.75	included	\$0	\$6,675	\$0	\$6,675
	FILL AND GRADE EXISTING POND	8178	CY	\$2.88	\$1.66	\$0	\$23,511	\$13,575	\$37,086
TRUCK WASH WATER TO SANITARY/METRO									
	NEW 4" LINE IN EXIST TRENCH	100	LF	\$6.50	\$4.06	\$0	\$650	\$406	\$1,056
	NEW 4" UG TO EXIST PUMP STA	140	LF	\$13.00	\$8.12	\$0	\$1,820	\$1,137	\$2,957
	REWORK DECAT PLUMB CONNECT	1	LS	\$1,000.00	\$1,000.00	\$0	\$1,000	\$1,000	\$2,000
	CONNECT TO EXIST PUMP VAULT	1	LS	\$1,000.00	\$1,000.00	\$0	\$1,000	\$1,000	\$2,000
	EXCAVATE FOR MANHOLE	19	CY	\$0.00	\$8.71	\$0	\$0	\$165	\$165
	MANHOLE	1	EA	\$572.00	\$389.70	\$0	\$572	\$390	\$962
	MISC FITTINGS, CLEANOUT, ETC	1	ALLOW	\$1,000.00	\$1,000.00	\$0	\$1,000	\$1,000	\$2,000
SUBTOTAL						\$15,000	\$149,950	\$57,733	\$222,683
CONTRACTOR OVERHEAD & PROFIT									\$33,402
CONTINGENCY									\$25,608
TOTAL									\$281,693